IN THE CLAIMS:

Listing of the claims:

1. (Currently amended) An imaging spectrometer comprising;

an imager for dividing a received image into two or more spatially separated spectral images, ~~and~~

detector apparatus for detecting each spectral image, and

an input optical retardation element to define the input polarisation state of the image received by the imager wherein the imager comprises at least one polarising beam splitter.

2. (Previously presented) A spectrometer according to claim 1 wherein the imager comprises an image replicator to produce two or more spatially separated images, and one or more filter elements which act to alter the spectral characteristics of one or more of the spatially separated images.

3. (Original) A spectrometer according to claim 2 wherein the filter elements are dichroic filter elements.

4. (Previously presented) A spectrometer according to claim 2 wherein the filter elements are located in the vicinity of said detector apparatus or a conjugate plane thereof.

5. (Previously presented) A spectrometer according to claim 2 having an image replicator that comprises two or more polarising beam splitters and additionally comprising optical retardation elements located between the polarising beam splitters.

6. (Cancelled)

7. (Original) A spectrometer according to claim 6 wherein the optical retardation imparted by the input optical retardation element is variable.

8. (Previously presented) A spectrometer according to claims 5 wherein at least one of the optical retardation elements have substantially wavelength independent retardation properties.

9. (Previously presented) A spectrometer according to claim 1 wherein the imager comprises one or more spectral replicator arranged in optical series, each spectral replicator comprising an optical retardation element and a polarising beam splitter.

10. (Original) A spectrometer according to claim 9 wherein one or more of the optical retardation elements provides a wavelength dependent polarisation change.

11. (Previously presented) A spectrometer according to claim 9 wherein the thickness of the one or more optical retardation elements is chosen to define the spectral properties of each spectral image.

12. (Previously presented) A spectrometer according to claim 1 wherein four or more spatially separated spectral images are produced.

13. Previously presented) A spectrometer according to claim 1 wherein each spectral image is composed of radiation within a different waveband.

14. (Previously presented) A spectrometer according to claim 1 wherein the detector apparatus comprises a detector array, each replicated image being directed to a separate portion of the detector array.

15. (Previously presented) A spectrometer according to claims 1 wherein the detector apparatus comprises two or more detector arrays.

16. (Original) A spectrometer according to claim 15 wherein a separate detector array is provided to detect each replicated image.

17. (Previously presented) A spectrometer according to claim 1 wherein the polarising beam splitter is a Wollaston prism.

18. (Previously presented) A spectrometer according to claim 1 wherein the optical components of the imager are formed as a single compound optical element.

19. (Previously presented) A spectrometer according to claim 1 and additionally comprising a field stop, the field stop limiting the field of view of the image received by the imager.

20. (Currently amended) An imaging spectrometer comprising;

imaging means for dividing a received image into two or more spatially separated spectral images, ~~and~~

means for detecting each spectral image, and

an input optical retardation element to define the input polarisation state of the image received by the imager ~~characterised in that~~ wherein the imaging means comprises at least one polarising beam splitter.